In the claims:

1-27. **(Canceled)**

28. **(Currently Amended)** A nucleic acid encoding a chimeric polypeptide comprising serum albumin protein (SA) having a biologically active peptide sequence inserted therein, wherein the chimeric polypeptide exhibits increased biological activity relative to said peptide sequence itself, wherein said peptide sequence (i) is heterologous to said serum albumin protein and (ii) interacts with a living organism to induce a change in a biological function of the organism or any part of the organism.

29. **(Previously Presented)** A delivery vector comprising the nucleic acid of claim 28, 54, or 55.

30. **(Original)** The delivery vector of claim 29, wherein said delivery vector comprises a virus or retrovirus.

31. **(Previously Presented)** The delivery vector of claim 30, wherein said virus or retrovirus is selected from adenoviruses, adeno-associated viruses, herpes simplex viruses, human immunodeficiency viruses, or vaccinia viruses.

32. **(Original)** Transfected cells comprising target cells which have been exposed to the delivery vector of claim 29.

33. **(Previously Presented)** The transfected cells of claim 32, wherein the cells are selected from blood cells, skeletal muscle cells, stem cells, skin cells, liver cells, secretory gland cells, hematopoietic cells, or marrow cells.

34-53. **(Canceled)**

54. **(Currently Amended)** A nucleic acid encoding a chimeric polypeptide having the structure A-B-C, wherein:

A represents a first fragment of serum albumin (SA);

B represents a biologically active peptide sequence; and,

C represents a second peptide fragment of SA;

wherein the chimeric polypeptide exhibits increased biological activity relative to said peptide sequence itself, and wherein said peptide sequence (i) is heterologous to said serum albumin protein and (ii) interacts with a living organism to induce a change in a

biological function of the organism or any part of the organism.

55. **(Currently Amended)** A nucleic acid encoding a chimeric polypeptide, which polypeptide comprises:

a first peptide fragment, comprising an N-terminal fragment of serum albumin (SA) protein;

a second peptide fragment, comprising a biologically active peptide sequence; and,

a third peptide fragment, comprising a C-terminal fragment of SA;

wherein the chimeric polypeptide exhibits increased biological activity relative to said peptide sequence itself, and wherein said peptide sequence (i) is heterologous to said serum albumin protein and (ii) interacts with a living organism to induce a change in a biological function of the organism or any part of the organism.

56. **(Previously Presented)** The nucleic acid of claim 28, 54 or 55, wherein said peptide sequence comprises a fragment of an angiogenesis-inhibiting protein or polypeptide.

57. **(Previously Presented)** The nucleic acid of claim 56, wherein said angiogenesis-inhibiting protein or polypeptide is selected from angiostatin, endostatin, or peptide fragments thereof.

58. **(Previously Presented)** The nucleic acid of claim 28, 54 or 55, wherein said peptide sequence binds to a cell surface receptor protein.

59. **(Previously Presented)** The nucleic acid of claim 58, wherein the receptor protein is a G-protein coupled receptor.

60. **(Previously Presented)** The nucleic acid of claim 58, wherein the receptor protein is a tyrosine kinase receptor.

61. **(Previously Presented)** The nucleic acid of claim 58, wherein the receptor protein is a cytokine receptor.

62. **(Previously Presented)** The nucleic acid of claim 58, wherein the receptor protein is a MIRR receptor.

63. **(Previously Presented)** The nucleic acid of claim 58, wherein the receptor protein is an orphan receptor.

64. **(Previously Presented)** The nucleic acid of claim 28, 54 or 55, wherein the chimeric polypeptide binds to an extracellular receptor or an ion channel.

65. **(Previously Presented)** The nucleic acid of claim 64, wherein the chimeric polypeptide is an agonist of said receptor or ion channel.

66. **(Previously Presented)** The nucleic acid of claim 64, wherein the chimeric polypeptide is an antagonist of said receptor or ion channel.

67. **(Previously Presented)** The nucleic acid of claim 28, 54 or 55, wherein the chimeric polypeptide induces apoptosis.

68. **(Previously Presented)** The nucleic acid of claim 28, 54 or 55, wherein the chimeric polypeptide modulates cell proliferation.

69. **(Previously Presented)** The nucleic acid of claim 28, 54 or 55, wherein the chimeric polypeptide modulates differentiation of cell types.

70. **(Previously Presented)** The nucleic acid of claim 28, 54 or 55, wherein said peptide sequence comprises between 4 and 400 residues.

71. **(Previously Presented)** The nucleic acid of claim 28, 54 or 55, wherein said peptide sequence comprises between 4 and 200 residues.

72. **(Previously Presented)** The nucleic acid of claim 28, 54 or 55, wherein said peptide sequence comprises between 4 and 100 residues.

73. **(Previously Presented)** The nucleic acid of claim 28, 54 or 55, wherein said peptide sequence comprises between 4 and 20 residues.

74. **(Previously Presented)** The nucleic acid of claim 28, 54 or 55, wherein the tertiary structure of the chimeric polypeptide is similar to the tertiary structure of native SA.

75. **(Previously Presented)** The nucleic acid of claim 28, wherein the inserted peptide sequence replaces a portion of native SA sequence.

76. **(Previously Presented)** The nucleic acid of claim 75, wherein the inserted peptide sequence and the replaced portion of native SA sequence are of unequal length.

77. **(Previously Presented)** The nucleic acid of claim 28, 54 or 55, wherein the chimeric polypeptide is at least 10 times more active than said biologically active peptide

sequence alone.

78. **(Previously Presented)** The nucleic acid of claim 28, 54 or 55, wherein the chimeric polypeptide is at least 100 times more active than said biologically active peptide sequence alone.

79. **(Previously Presented)** The nucleic acid of claim 28, 54 or 55, wherein the chimeric polypeptide is at least 1000 times more active than said biologically active peptide sequence alone.

80. **(Currently amended)** A nucleic acid encoding a chimeric polypeptide comprising serum albumin (SA) having at least two biologically active peptide sequences inserted therein, wherein at least one biologically active peptide sequence exhibits increased biological activity relative to said one biologically active peptide sequence itself, wherein said at least two biologically active peptide sequences are (i) heterologous to said serum albumin and (ii) interact with a living organism to induce a change in a biological function of the organism or any part of the organism.

81. **(Previously Presented)** The nucleic acid of claim 80, wherein said at least two biologically active peptide sequences are identical.

82. **(Previously Presented)** The nucleic acid of claim 80, wherein said at least two biologically active peptide sequences comprise distinct sequences of a protein.

83. **(Previously Presented)** The nucleic acid of claim 80, wherein said at least two biologically active peptide sequences comprise sequences from at least two different proteins.

84. **(Previously Presented)** The nucleic acid of claim 28, 54 or 55, wherein said peptide sequence is the myc epitope or the RGD peptide.

85. **(Currently Amended)** The nucleic acid of claim 28, wherein said peptide sequence is inserted into a cysteine loop of the serum ~~albumen~~ albumin protein.

86. **(Previously Presented)** The nucleic acid of claim 85, wherein the cysteine loop is selected from Cys53-Cys62, Cys75-Cys91, Cys90-Cys101, Cys245-Cys253, Cys266-Cys279, Cys360-Cys369, Cys461-Cys477, Cys476-Cys487, or Cys558-Cys567.

87. **(Currently Amended)** The nucleic acid of claim 75, wherein said peptide sequence

replaces a portion of a cysteine loop of the serum ~~albumen~~ albumin protein.

88. **(Previously Presented)** The nucleic acid of claim 87, wherein the cysteine loop is selected from Cys53-Cys62, Cys75-Cys91, Cys90-Cys101, Cys245-Cys253, Cys266-Cys279, Cys360-Cys369, Cys461-Cys477, Cys476-Cys487, or Cys558-Cys567.

89-92. **(Canceled)**

93. **(Previously Presented)** The delivery vector of claim 29, 30 or 31, wherein said peptide sequence comprises between 4 and 100 residues.

94. **(Previously Presented)** Transfected cells of claim 32 or 33, wherein said peptide sequence comprises between 4 and 100 residues.

95. **(Previously Presented)** The nucleic acid of claim 56, wherein said peptide sequence comprises between 4 and 100 residues.

96. **(Previously Presented)** The nucleic acid of claim 58, wherein said peptide sequence comprises between 4 and 100 residues.

97. **(Previously Presented)** The nucleic acid of claim 78, wherein said peptide sequence comprises between 4 and 100 residues.

98. **(Previously Presented)** The nucleic acid of claim 75, 80, 82, 83, 85, 86, 87, or 88, wherein said peptide sequence comprises between 4 and 100 residues.

99. **(Previously Presented)** The delivery vector of claim 29, 30 or 31, wherein said peptide sequence comprises between 4 and 20 residues.

100. **(Previously Presented)** Transfected cells of claim 32 or 33, wherein said peptide sequence comprises between 4 and 20 residues.

101. **(Previously Presented)** The nucleic acid of claim 56, wherein said peptide sequence comprises between 4 and 20 residues.

102. **(Previously Presented)** The nucleic acid of claim 58, wherein said peptide sequence comprises between 4 and 20 residues.

103. **(Previously Presented)** The nucleic acid of claim 78, wherein said peptide sequence comprises between 4 and 20 residues.

104. **(Previously Presented)** The nucleic acid of claim 75, 80, 82, 83, 85, 86, 87, or 88,

wherein said peptide sequence comprises between 4 and 20 residues.